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IN FORMER CAMPAIGNS.

BY

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ON GUNSHOT WOUNDS OF THE THORAX, AND THE TREATMENT PURSUED FOR THEM IN THE CRIMEA, CONTRASTED WITH THAT WHICH WAS FOLLOWED IN FORMER CAMPAIGNS.

By George Lawson, F.R.C.S.

Amongst the numerous results of the late Crimean war in the treatment of various diseases and injuries, there are none which are more conspicuous than those which relate to gunshot injuries of the thorax.

For very many years past, nearly all we knew on this subject was derived from the experience of the wars in the Peninsular and elsewhere; and we were compelled to receive the dictates of the old army surgeons as to the proper mode of treatment required in such cases, as no opportunity had been afforded for treating in a different manner a sufficient number of cases to allow any individual to collect data upon which he could form any correct statistics.

Crammed with the opinions of Henner, Guthrie, Ballingall, and others, the army surgeons started with their regiments, at the commencement of the Crimean campaign, to carry out the practice which had gone before them, or to alter, if circumstances should demand it, the almost empirical line of treatment which had been laid down by some of our highest military surgeons.

Before leaving England, I was asked, and I believe also nearly every other assistant-surgeon, whether I was furnished with two lancets and case, as they were supposed to form part of the necessary baggage of the doctor; and we were all imbued with the idea that whatever other work might be demanded of us, we should at least have many times to perform the operation of venæsection; for gunshot injuries of the thorax, must, and will occur, in every engagement, and we were told by books—for of experience we had had none—that in such cases we must bleed, and, if after one venæsection the patient still showed no signs of improvement, we were told we must bleed again, and this must be repeated again and again, until either the patient dies, or symptoms of restoration begin to show themselves. Mr. Guthrie remarks in his chapter on pleuritis and pneumonia, that "In young people the bleeding should be continued until the desired object has been effected; the quantity required to be drawn in inflammation, particularly after injuries, is often very great. It may almost become a question in some cases, whether the patient shall be allowed to die of the disease, or from loss of blood; for convalescence is rapid in proportion as the inflammation is of a small extent and has been early subdued."

Great indeed, has been the change which the Crimean war has worked in the treatment of this class of injuries, and, as I had ample opportunities of witnessing many of them, I have thought that a short paper on this subject would prove of interest to some, and would be one which would afford the members of this Society ample means for future reflection.

From the post I held, viz., that of staff assistant-surgeon, and being nearly all the time I was abroad with the army in the front, I was only enabled to witness the treatment of

injuries during the first few days after their infliction, as the Hospital Marquees were being continually drafted of their sick and wounded, who were sent either to the Castle or General Hospital at Balaklava, or perhaps forwarded on to Scutari. It is to Mr. Matthew, staff-surgeon 1st class, who had charge of the wounded hospital at the Castle, Balaklava, that I am indebted for the cases I am going to lay before you in this paper.

And first, what is the nature of the injuries to which the thorax is exposed, and what are the peculiarities which distinguish this class of cases from all others.

From the importance to life of the parts contained within the chest, any severe injury to the walls of the thorax is usually shared in by its contents; hence we find it is not necessary either that the external parts should be lacerated or its cavity opened to produce a fatal result.

A severe contusion of the wall of the chest only, caused by a fragment of a shell or a spent shot may produce such serious injury to the lungs as rapidly to cause death. A case of this kind occurred in the 93rd Regiment, when a round shot struck the left scapula and produced fatal contusion of the lungs. Or the converse of this may sometimes happen. The integuments may be severely lacerated and the ribs or the cartilages broken without opening the cavity of the thorax, yet the severity of the injury may be such as to endanger life without affecting the lungs or contents of the thorax.

An officer of the 95th Regiment, æt. 32, a fine healthy man, was wounded on the 22nd of August, and admitted at the Castle Hospital on the 27th. He had received extensive shell laceration at the epigastrium—a large semicircular flap of skin, cellular tissue, and fat, with the more superficial portion of the muscles, had been torn from the lower portion of the chest and upper part of the epigastrium, and been reverted on to the belly. It was rather more than 10 inches in diameter from side to side, and some 6 or 7 in perpendicular measurement. The cavity of the belly was not opened.

The cartilages of the 8th and 9th ribs were fractured on the left side, about 3 inches external to the above-mentioned flap, and the xyphoid cartilage laid bare.

This officer, notwithstanding a severe attack of erysipelas which involved the whole of the left side of the body, and sloughing which took place over the broken ends of the cartilages of the ribs, causing them to protrude, yet, under the influence of port wine and good nourishment, ultimately recovered, and was sent to England, with the wound all but healed, on the 16th of January.

The most common injury, however, which is met with, is when the musket-ball enters the thorax. Since the introduction of the Enfield, the minie, the needle, and other rifles, it is rarely found, compared with former accounts, that the ball lodges in the lung,—the increased velocity with which it is propelled causes it to pass out of the thorax at some point at the opposite side of the chest. This of course does not always happen, and the lodgement of balls in the lung is still, though not so frequently, met with.

In the passage of the ball everything opposing it, is as a rule, carried in front of it, and hence in such cases we meet with portions of the individual's dress in the wound, and although the ball may have passed through, still in the track of the wound these fragments will be found. Such are the immediate results of a gunshot injury in this locality, and it requires but a small amount of consideration to perceive the danger of such injuries.

The patient may perish immediately if the injury to the part be severe, large blood-vessels may be torn through and he may die of hæmorrhage; or shock from the severity of the injury may carry him off in a few hours. Should he, however, survive the first effects, pleuro-pneumonia and its

consequences may kill him, or even at a later period he may sink under the exhausting effects of profuse suppuration. All these circumstances render injuries of the chest peculiarly interesting to the surgeon, whether military or civil, and the question is by what mode of treatment are such cases most advantageously handled.

The condition of health a man is in when he receives an injury, must, and does exercise a considerable influence in accelerating or retarding his recovery, and must also modify the line of treatment which ought to be adopted.

No positive directions can be laid down as to how any particular class of cases ought to be treated; each is almost certain to present features of interest peculiar to itself, and it should be left to the surgeon to use those remedies which his experience or judgment may deem advisable.

Before the first shot was fired at the Balganack or the battle of Alma was fought, the British troops had gone through a period of probation highly unfavorable for the severe trials they were yet to experience.

Brought from England at the latter end of February, they were placed in camp at Malta, from which place they were, in about a month's time, conveyed to Gallipoli.

Here they were under canvass, and a large proportion of them were exposed during the day in making entrenchments from the Gulf of Saros to the Sea of Marmora, for the purpose of staying the imaginary progress of the Russians, who would, it was supposed, if they succeeded in taking Constantinople, march down to Gallipoli to secure the entrance to the Dardanelles.

The men suffered severely from diarrhœa and fever, the result of this exposure. The troops were then ordered to Varna. Here the way in which they were almost decimated

by cholera and fever is too well-known for me to take up your time with describing. Encamped at first on marshy ground close to the lake Devna, cholera, assisted by remittent and intermittent fever, carried off daily its victims by scores. Even those who apparently escaped disease were not without the pale of its influence. The rapid manner in which men afterwards succumbed must surely be considered in a great measure due to the way in which their constitutions had been debilitated by six months' exposure to the sun and the miasmata of an unhealthy country. From Varna the expedition sailed to the Crimea, and the landing at the old fort and the drenching rain which poured during the whole of the first night, on the luckless men who were bivouacked without tents on an open plain, must be fresh in the memory of all. Here our troubles commenced. For the first four or five days we remained where we landed, and, almost deprived of water, we at first drank from the puddles the rain which had so thoroughly wetted us during the night. Ablution and change of garments were not thought of, for we did not possess the means of doing either. To this succeeded long marches, then the battle of the Alma, fought by men at one o'clock in the day, many of whom had not that morning breakfasted. A succession of marches at last brought us to Balaklava, and then to the front of Sebastopol, where evil followed evil, and misfortune misfortune, until the men, as the late Dr. Pyne described in his letter to Lord Raglan, "half starved, ill-fed, and over-worked," sank under wounds which in many cases seemed but apologies for dying. These antecedents had indeed their influence on those who were wounded, and consequently caused great modifications to be made in their treatment.

When a patient is brought into the hospital suffering from

a gunshot wound of the thorax, the first thing which strikes the surgeon is the state of extreme collapse he is in. His face is blanched, the features pinched, and presenting a peculiarly anxious expression. There is probably some bloody, frothy expectoration, and difficulty of breathing, in proportion to the amount of damage which the lung has received. The pulse is usually small and irregular, the surface of the body cold. On stripping him we examine the nature of the wound, ascertain whether the ball has passed through the thorax or lodged in the lung, and whether there is any hæmorrhage going on externally through the wound, or internally into the pleura.

Often, when no orifice of egress can be found, a careful examination will detect the ball lying at some point beneath the skin at the opposite side of the chest, perhaps just beneath the angle of the scapula. Emphysema to a greater or less extent will probably exist, the air passing out of the wound during expiration, and escaping partly into the cellular tissue in the neighbourhood.

Such are the usual features which at first present themselves on examining a gunshot wound of this region.

With regard to the collapse I would say a few words. It is the immediate result of all gunshot injuries, but it is far more marked in those which relate to the thorax and abdomen. This would be partly explained by the serious consequences which occur from wounds to any of the various organs contained in either of these cavities, but it must also be partly attributed to the greater degree of apprehension which exists in the mind of the patient as to the severity of the injury he has received. To the unprofessional mind a degree of mystery hangs over the contents of the thorax and abdomen, and as the hidden foe is dreaded more than the open enemy, so wounds of parts which are unseen create much greater

alarm in the patient's mind than those which, however horrible, are exposed to his view.

I imagine that another cause of the great collapse which is witnessed amongst so many of the wounded may be accounted for in the following manner.

A man when he is under fire, whether in a general action or in the trenches, has his nervous energies in a state of the highest tension. He is in a condition of the greatest excitement. Cool, as regards his exterior, he may be, and is, capable both of giving, receiving and obeying commands, yet his mind is in a state of expectant attention, he is performing his duty under a high nervous pressure.

I think even the greatest stoic will acknowledge that the buzz of a round shot or the twing of a bullet passing over his head or in close proximity to his person produces a tumultuous action of the heart, or, as I have heard men say, 'an indescribable all-overish sensation,' which lasts as long as these unpleasant sounds continue to grate on one's ears. Suddenly he is wounded, and as we know that in all human affairs the greatest depression follows the greatest excitement, so it is in gunshot wounds, and this depression, coupled with the anxiety which is usually manifested by the patient as to the severity and danger of the injury which he has received will account for a large amount of the collapse which is always seen in such cases.

Let us now consider what are the objects we have to aim at in the treatment of wounds of the thorax.

In a gunshot injury of this region, whether the lung is wounded by the ball having passed through it, or whether it has lodged, we have still a wound communicating with the external air. Along its track the tissues are bruised, broken down, and their vitality greatly destroyed. Inflammation and

suppuration must take place along this line. It is necessary for the casting off the dead tissue, by it, foreign particles which have been carried before the ball in its progress are washed out, and through its means healthy granulations may spring up and obliterate the canal, leaving only an almost linear cicatrix to mark the bullet's former course. It is the surgeon's care to keep this inflammatory action within the bounds necessary for the reparative process, and at the same time to maintain it sufficient for the required purpose. He desires that this action which is going on in the track of the bullet should be limited, that the whole lung should not participate in the inflammatory process which the wound has kindled.

This limitation of inflammation and suppuration is effected by means of an effusion of coagulable lymph external to, and along the site of, the injury, cutting it off, as it were, from the healthy tissue and isolating it until nature has completed her work of repair, thus preventing anything beyond a local patch of pneumonia or a spot of pleurisy. This, indeed, is greatly to be desired in cases where the ball has lodged. In such instances it has been invested in an adventitious cyst, and thus coated has remained for years in its new situation, without producing much distress to the patient.

Mr. Paget, in his lectures on pathology, states that he has found in the so-called serum, raised by the blister of cantharides, that the amount of fibrinous or coagulable lymph in each case varied according to the strength and vigour of the patient. Thus, he observes, "in cases of purely local disease in patients otherwise sound, the lymph thus obtained formed an almost unmixed coagulum in which, when the fluid was pressed out, the fibrine was firm, elastic, and apparently filamentous. In cases at the opposite end of the

scale—such as those of advanced phthisis, &c.,—a minimum of fibrine was concealed by crowds of corpuscles embedded in it;" and in another passage he observes, "that the highest health is marked by an exudation containing the most perfect and unmixed fibrine, the lowest by the formation of the most abundant corpuscles, and the nearest approach, even in their early stage, to the characters of pus cells."

The truth of these remarks may be witnessed in one's daily practice at the Hospital. In the weak, ill-conditioned patient, we see diffuse inflammation and suppuration, produced by causes which in the healthy man would certainly not have been followed by anything beyond a small local abscess. The fibrinous lymph which in the one confines within its limits the collection of pus, in the unhealthy patient seems scarcely to exist, and ill-formed lymph, chiefly corpuscular, is exuded into the surrounding cellular tissue, without any distinct boundary. I think you will, from these remarks, see the necessity of maintaining the strength of the patient as much as possible in such cases, where extensive repair of any organ has to be effected, and where it is desirable that the inflammation which must result to carry out the desired end should be limited to the injured part.

The old military surgeons advised in the treatment of cases of injury to the chest produced by any of the missiles of war, free venæsection. In the first instance bleeding was to be resorted to for the arrest of the hæmorrhage, and afterwards to be repeated for the prevention or cure of pneumonia or pleuro-pneumonia, as the case might be. In the treatment of pleuro-pneumonia Mr. Guthrie remarks that after his experience at Berry Head, in Torbay, where the men of the regiment which was under his medical charge suffered severely from this affection: "It was evident that to

succeed, no limit should be placed to the abstraction of blood in the first instance, but the decided incapability of bearing further loss."

In a further part of the same chapter he advises "that when the patient is likely to faint he should be bled in the recumbent position, and as it is advisable to take away a sufficient quantity of blood, great care should be taken, by arresting its flow for a time, by giving stimulants, by admitting fresh air, and by sprinkling with cold water, to prevent syncope, which is sometimes dangerous in elderly persons who may be subject to and are not readily recovered from it."

This line of treatment, which Mr. Guthrie states he found so successful at Berry Head, and afterwards in America, he practised for the relief of the pneumonia which follows gunshot injuries of *the thorax*. Any man, however, who has read both his early and late works, will observe that "a change was gradually coming over the spirit of his dream," and that he advises far less sanguinary proceedings in the last edition of his commentaries.

Mr. Hennen, in his admirable work on gunshot wounds, lays down very positive rules about the early treatment of those injuries of the thorax. He says the mode which should instantly be adopted in such cases, is as follows: "without searching after balls or fragments of bone, or attempting to ascertain the precise track of the bayonet or pike, or expatiating, as I have seen done by some gentlemen fresh from their studies, upon the particular vessels or branches which may be injured, let the man lay quietly along, and lose from 20 to 40 ounces of blood from his arm by a large orifice."

The experience of the army surgeons, during the late war, certainly does not sustain the imperative orders of the old

Peninsular surgeons with regard to bleeding, and I think that the result of the success which attended our endeavours will, if published, satisfy the most sceptical that it is not necessary to drain a patient almost to his last drop, in order to prevent nature in her endeavours to heal a wound from destroying the patient by that inflammatory process, which she had kindled for the purpose of repair. It must, however, be borne in mind that the missiles used in the late war, were far more destructive than those in former times, and consequently the injuries inflicted were far more severe, and probably, therefore, the proportion of deaths to wounds may be considered rather larger.

In the treatment of gunshot injuries of the thorax, our first aim is to ascertain if any hæmorrhage is going on. Now this may take place either from a wound of one of the arteries in the wall of the chest, or it may come from the substance of the lung. It may be either externally through the wound, or, as appears to be more frequently the case, internally into the cavity of the pleura. Hæmorrhage from an intercostal artery, is said to be under the control of the surgeon, but I learn from Mr. Matthew that in no instance during the late war is there recorded an operation for securing the vessel having been resorted to. This, he observes, arose partly from the fact that the external hæmorrhage seen in these cases is usually so small as neither to warrant nor require any proceeding of this kind, and partly from the difficulty in positively diagnosing the presence of blood. The following case illustrates well the symptom of hæmorrhage taking place into the pleura.

Captain F., 9th Regt., while helping to place a wounded officer on a stretcher, on the 18th of June, was struck in the back by a grape shot, passing from left to right. It fractured the spinous processes of the 8th and 9th dorsal vertebræ, and, as was afterwards discovered, the necks of the 7th and 8th ribs of the right side. On being brought to the hospital, shortly

after the injury, he was bedewed with a cold, clammy sweat—pulse small, weak, and hæmorrhagic, respiration laboured and puerile, no loss of sensation in the lower extremities. The respiration continued laboured, but without cough or pain. After a few hours gradually increasing dullness on the right side on percussion was noticed, and some emphysema, more especially of the cellular tissue under the pectoral muscle. Air passed freely through the wound, which externally was very extensive, into the pleura. Stimulants, bandaging, and the supine position were employed. He continued much in the same state the following day, and towards evening respiration had almost ceased in the right lung. Reaction now set in and the pulse became hard and wiry. He was bled to 20 ounces under which the pulse became softer and respiration freer. He gradually, however, sank, and died on the 30th.

P.M.—The right pleura was found filled with blood, and the lower lobe of the left lung solidified. The necks of the two ribs were protruding into the pleura. The surgeon, in his report of the case, says that the source of the blood in the chest was the laceration of the intercostal arteries by the fractured extremities of the ribs, and remarks that he did not believe an operation would have been justifiable with the spinous processes of the vertebræ fractured, and a grave suspicion that one of the vertebræ itself was in a similar condition.

The fracture of the ribs being between the tubercles and their necks could not be detected during life.

In such cases of hæmorrhage, I believe the best mode of treatment is by venæsection, sufficient to induce syncope, and thus favour the coagulation of the blood and the formation of a clot in the vessel. The patient should not be roused from his state of collapse by stimulants unless it be excessive. When the hæmorrhage takes place externally sufficient blood may be lost to produce faintness and the desired arrest of the bleeding, but it is where it is internal that general bleeding is so much demanded. In cases where the hæmorrhage proceeds from a wound in the lung it is the patient's only chance. Having succeeded in placing the patient out of the danger of death from bleeding, the lancet-case should be closed, or if from the first there has been no external hæmorrhage or symptoms of internal, venæsection need never be resorted to.

Inflammation of a lung following a wound is reparative in

its action, and is perfectly distinct from the so-called idiopathic inflammation arising from a chilling of the surface and a consequent congestion of the organs within, or from inflammation originating in a poisoned state of the blood. The one is a necessary, and, to a great extent, a healthful process, the others are morbid ones. The former should be merely watched by the surgeon and kept within its proper bounds, the latter may and do require active treatment. In a case of a penetrating wound of the eyeball we may have resulting iritis, with inflammation of the sclerotic, conjunctiva, &c. Yet, you would consider the surgeon did wrong if he immediately put the patient on calomel and opium, or largely bled him, or adopted such active treatment as would be considered justifiable in cases of iritis, &c., arising from other causes. The inflammation is healthful, it is proper for the repair, and if not meddled with unnecessarily will probably work out the desired result. No attempt should be made to close the wound in the chest, but having been covered with some light dressing, and if the patient can bear it, a roller having been applied to the chest, he should be placed in bed. As I have mentioned before, he should not be rallied from his state of collapse unless it be severe.

Much has been said about placing the patient on the wounded side. Perhaps in some cases this may be of importance, as it allows the discharge to escape through the wound, it prevents much movement of the ribs of that side, and it approximates the opposed surfaces of the wounded pleura. This latter is of course of the utmost importance, but if the bullet has passed through the chest by placing the patient on one side, although you make the opposed surfaces of the pleura come nearly in contact in the site of one of the wounds, yet you draw them apart in the neighbourhood of the other.

The patient will generally choose for himself that position which is most comfortable and better suited to the requirements of his case. His diet should be light, nutritious and unstimulating; although we wish to support the patient well, yet we are not anxious to increase his circulation and hurry more blood through the lungs than necessary. Sudorifics should be given to act on the skin, and thus help to relieve the lungs of a portion of their duty, and the bowels should be kept acting regularly. By pursuing this mode of treatment I believe the patient stands the best chance of recovery.

I will now quote a few cases to illustrate the remarks which I have made:—

W. English, 2nd battallion, Rifle Brigade, was hit by a musket-ball in the back, on the 18th of June, which entered between the 7th and 8th ribs, causing a compound comminuted fracture of the 7th rib, and passing through the lung, escaped from the middle of the pectoralis major in front. The wounds were lightly dressed, and the interior one healed in ten days, but the posterior one remained open. Air entered it in inspiration, and from it a large quantity of sero-purulent fluid flowed. He complained of great pain, but there was never much fever. His health, however, after a time, began to improve. His appetite was good, and the discharge was becoming less copious.

Twenty-nine days after the injury, when everything was apparently doing well, he was seized with acute dysentery, and died.

P.M. Examination: Strong adhesion between the surface of the lung and the costal pleura was found to have taken place in the neighbourhood of the wound as well as that of the diaphragm. The course of the bullet was traced through nearly four inches of the lung, which was otherwise healthy and floated in water.

Here we have the case of a man receiving a very severe injury to the lung, with a compound comminuted fracture of one of the ribs. He was not bled, and yet we find, twenty-nine days after the receipt of the wound, the man in so favorable a condition that one might almost speak with certainty of his ultimate recovery.

An attack of dysentery, however, unfortunately kills him, and we find on making the *post mortem* that the inflammation had been local, limited to the seat of the injury, and not participated in by the rest of the lung:—

Dominick Murray, 18th Regiment, æt. 33, was admitted on the 26th of June, with a penetrating wound of the chest. The bullet, a minie, entered a little above and two inches to the left of the left nipple, and lodged beneath the inferior angle of the scapula, whence it was extracted by incision. The patient was dressed and ordered to lie towards the affected side. In the evening the pulse was 120, breathing was difficult, and loud cepitant râles were heard over the whole chest. He was bled from the arm to 40 ounces, with relief.

On the 27th emphysema had appeared about the posterior costa of the scapula. Bowels costive; breathing still hurried and difficult. Bled again to 30 ounces and ordered a dose of calomel and jalap, to be followed by an enema, if necessary.

28th, no better, pulse very weak, breathing still hurried, ordered calomel and antimony in small doses.

Diarrhœa came on, on the 29th, and ere it was checked the patient became the subject of typhoid pneumonia, and died on the 5th July with all the symptoms of that disease as described by Mr. Guthrie.

In this case the patient was treated according to the rules laid down by our highest military authorities, and died of the disease so graphically described by one of them.

The following is a most interesting case:—

Samuel Turgoose, R.A., æt. 32, was wounded on the 15th of November, 1855, by a fragment of an exploded shell, which entered the left side of the chest, between the vertebral column and the angle of the 9th rib, fractured two or more ribs, and came out at the lower part of the left lateral region of the chest, slightly to its anterior part. A smart attack of pneumonia supervened, treated chiefly by antimonials in one of the regimental hospitals, and he was admitted for further treatment at the Castle Hospital, on the 24th of December. There was then very profuse discharge from the wound. Physical examination showed a very circumscribed collection of fluid at the lower and back part of the injured side of the chest, but the lung elsewhere appeared to be then healthy. The man was very much reduced and considerably emaciated. As many fragments of dead bone were present, an incision, about three inches in length, was made from the lower or

lateral opening where they were most evident, and nearest the surface in the direction of the wound, and a great number of small comminuted portions of dead bone removed, together with a fragment of a leathern brace. These undoubtedly should have been removed in the first instance.

Further examination showed, however, that more necrosed bone existed at the site of entrance, and on the 31st another incision, also about three inches in length and in the direction of the wound, was made from it by a probe-pointed knife, and a very considerable quantity of dead rib removed. The greater part of this was split into longitudinal fragments of no great thickness, but one portion, about four inches in length, between the two incisions, involved the entire thickness of one rib.

It was now evident that the shell fragment had entered the chest at the posterior opening by smashing the 9th rib, which it had again comminuted at its exit, leaving this portion untouched between the two points.

Some difficulty was experienced in removing it without laying the two incisions into one, but a little further cutting and some care effected it.

The finger could now readily be passed into the chest and the size of the pleural abscess estimated. It appeared to have been large enough to have contained, if full, at least half a pint of fluid, but it was partly empty, or rather contained air.

No more fragments of extraneous matter could be detected; the wounds were therefore dressed with water dressing, and the man given a liberal diet. From the above date he improved rapidly, and on the 31st January is reported almost well. On the 26th of March, however, there was still a small sinus open at the site of the upper or posterior wound, but the man was fat and well, and the sinus soon afterwards closed.

On the 12th of April a small abscess had formed, and given way at the site of the lateral opening, but no dead bone or foreign substance came away, nor could any be felt with a probe.

He proceeded to England on the 19th of April, fat and well, and the lung working normally.

In this case, at least nine inches of the entire thickness of the ninth rib was removed, as well as a portion of the tenth.

I have detailed this case in full, considering the whole of it so full of interest, that I was unable to curtail it without detracting from its merits.

The man was under the care of Dr. Matthew at the Castle Hospital, and was treated by him, and, fortunate, indeed, was it for the patient, that no antiphlogistic preventative or curative treatment was carried out in his case. It illustrates how much a man will endure, and how much damage nature will restore if her endeavours are aided, and not thwarted by the surgeon.

The cases which I have quoted are not sufficient in number to allow any correct deductions to be drawn from them, yet, when we consider that they are only samples of many in

which similar treatment was pursued, and not cases picked to favor any particular mode of reasoning, I think we may justly draw from them, and the remarks which I have made, the two following conclusions :—

1st. That in the treatment of gunshot injuries of the thorax, venæsection as a rule is only required to arrest hæmorrhage.

2nd. That traumatic pneumonia, or that which follows such injuries, does not necessitate the same active antiphlogistic remedies as pneumonia arising from other causes, and that the tendency of the inflammatory action is to repair the damage which has been inflicted, and therefore the surgeon should be careful how he rashly interferes with the progress which nature sets up for the patient's benefit.

Do not think that I am an abolitionist, and that I consider the lancet ought never to be used in the treatment of such cases. There are instances where judicious bleeding may be of the greatest benefit to the patient, but what I want to prove is, that bleeding is not a panacea for injuries to the thorax, and that it is not necessary, in order to prevent the patient dying of the injury he has received, to place him almost within death's grasp from copious venæsection.

If I have succeeded in establishing these facts, I have fully accomplished the object of this paper.